

**ABSTRACT:**

The present invention is a system and method for performing real-time infection control over a computer network. The method comprises obtaining a sample of a microorganism at a health care facility, sequencing a first region of a nucleic acid from the microorganism sample, comparing the first sequenced region with historical sequence data stored in a database, 5 determining a measure of phylogenetic relatedness between the microorganism sample and historical samples stored in the database, and providing infection control information based on the phylogenetic relatedness determination to the health care facility, thereby allowing the health care facility to use the infection control information to control or prevent the spread of an infection.